

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings of claims in the application:

Listing of Claims:

1. - 7. (Canceled)

8. (New) A thermoelectric generator for generating electricity from a temperature differential between a first fluid and a second fluid, the thermoelectric generator comprising:

a plurality of thermoelectric modules, wherein:

each of the thermoelectric modules comprises a first side and a second side; and

each of the thermoelectric modules generates electricity when there is a difference in temperature between the first side and the second side;

a plurality of first thermal modules, wherein:

at least one of the plurality of first thermal modules is flexibly coupled with at least one other of the plurality of first thermal modules;

at least one of the plurality of first thermal modules is configured to receive the first fluid; and

at least one of the plurality of first thermal modules is configured to exchange heat with the first side of at least one of the plurality of thermoelectric modules; and

a plurality of second thermal modules, wherein:

at least one of the plurality of second thermal modules is flexibly coupled with at least one other of the plurality of second thermal modules;

at least one of the plurality of second thermal modules is configured to receive the second fluid; and

at least one of the plurality of second thermal modules is configured to exchange heat with the second side of at least one of the plurality of thermoelectric modules.

9. (New) The thermoelectric generator for generating electricity from the temperature differential between the first fluid and the second fluid of claim 8, wherein the thermoelectric generator further comprises:

a compression mechanism, wherein the compression mechanism is operably coupled with two of the plurality of first thermal modules such that at least one of the plurality of second thermal modules and at least one of the plurality of thermoelectric modules is compressed between two of the plurality of first thermal modules.

10. (New) The thermoelectric generator for generating electricity from the temperature differential between the first fluid and the second fluid of claim 9, wherein:

the compression mechanism comprises a rod and a spring.

11. (New) The thermoelectric generator for generating electricity from the temperature differential between the first fluid and the second fluid of claim 9, wherein:

the compression mechanism is configured to compress with an actively variable force.

12. (New) The thermoelectric generator for generating electricity from the temperature differential between the first fluid and the second fluid of claim 9, wherein:

the compression mechanism is configured to compensate for thermal expansion and thermal contraction of at least one of the plurality of first thermal modules.

13. (New) The thermoelectric generator for generating electricity from the temperature differential between the first fluid and the second fluid of claim 9, wherein:

the compression mechanism is configured to compensate for stack tolerance build-up of the plurality of first thermal modules.

14. (New) The thermoelectric generator for generating electricity from the temperature differential between the first fluid and the second fluid of claim 8, wherein at least one of the plurality of first thermal modules being flexibly coupled with at least one other of the plurality of first thermal modules comprises:

at least one of the plurality of first thermal modules flexibly coupled with at least one other of the first thermal modules such that the thermal modules have two degrees of freedom of movement relative to the each other.

15. (New) The thermoelectric generator for generating electricity from the temperature differential between the first fluid and the second fluid of claim 8, wherein at least one of the plurality of first thermal modules being flexibly coupled with at least one other of the plurality of first thermal modules comprises:

at least one of the plurality of first thermal modules flexibly coupled with at least one other of the first thermal modules such that the thermal modules have three degrees of freedom of movement relative to the each other.

16. (New) The thermoelectric generator for generating electricity from the temperature differential between the first fluid and the second fluid of claim 8, wherein at least one of the plurality of first thermal modules being flexibly coupled with at least one other of the plurality of first thermal modules comprises:

at least one of the plurality of first thermal modules being coupled via an o-ring slip joint with at least one other of the first plurality of first thermal modules.

17. (New) A thermoelectric generator for generating electricity from a temperature differential between a plurality of thermal modules, the thermoelectric generator comprising:

a first thermal module;
a second thermal module;
a first thermoelectric module disposed between the first thermal module and the second thermal module;

a third thermal module; and

a second thermoelectric module disposed between the second thermal module and the third thermal module, wherein the first thermal module is flexible coupled with the third thermal module.

18. (New) The thermoelectric generator for generating electricity from the temperature differential between the plurality of thermal modules of claim 17, wherein the first thermal module comprises:

a first sub-module flexibly coupled with a second sub-module.

19. (New) The thermoelectric generator for generating electricity from the temperature differential between the plurality of thermal modules of claim 17, wherein the second thermal module comprises:

a first sub-module flexibly coupled with a second sub-module.

20. (New) The thermoelectric generator for generating electricity from the temperature differential between the plurality of thermal modules of claim 17, wherein the first thermal module being flexible coupled with the third thermal module comprises:

a compression mechanism operably coupled with the first thermal module and the third thermal module.

21. (New) The thermoelectric generator for generating electricity from the temperature differential between the plurality of thermal modules of claim 20, wherein:

the compression mechanism is configured to compensate for thermal expansion and thermal contraction of at least the second thermal module.

22. (New) The thermoelectric generator for generating electricity from the temperature differential between the plurality of thermal modules of claim 17, wherein

the first thermal module and the third thermal module are flexibly and fluidically coupled.

23. (New) A method of generating electricity from a temperature differential between a first fluid and a second fluid, wherein the method comprises:

providing a first fluid to a plurality of first thermal modules;

providing a second fluid to a plurality of second thermal modules;

disposing, at least partially, at least one thermoelectric module between at least a portion of the plurality of first thermal modules and the plurality of second thermal modules; and

compressing, actively and variably, the at least one thermoelectric module between at least a portion of the plurality of first thermal modules and the plurality of second thermal modules.